



ST. LOUIS DISTRICT MOBILITY

BI-MONTHLY REGIONAL MOBILITY REPORT ■ NOVEMBER / DECEMBER 2017 | EDITION NO. 01

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Provide Outstanding Customer Service & Deliver Transportation Services of Great Value

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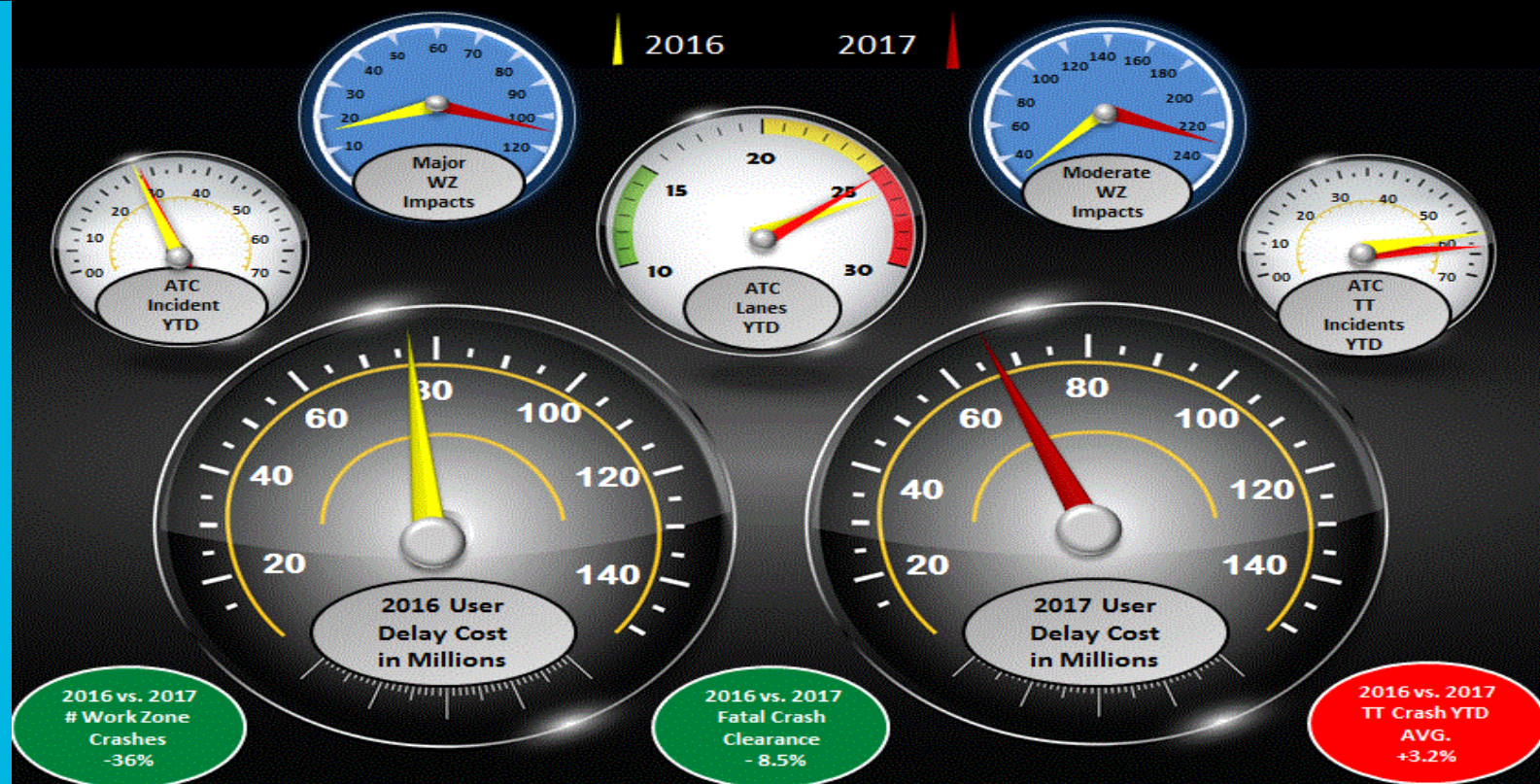
Operate a Reliable and Convenient Transportation System
Use Resources Wisely & Advance Economic Development

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Keep Roads and Bridges in Good Condition

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Keep Customers and Ourselves Safe



User Delay Cost: Passenger Vehicle \$17.91 Commercial Vehicle \$63.66
Sources Texas Transportation Institute & American Transportation Research Institute

2016 Grand Total and Average

Delay cost:
Total \$76,182,938.39 Per VMT \$0.01
Hours of delay:
Person-hours: 3,519,705h 3m 7s
Vehicle hours: 2,873,228h 36m 49s

Vehicle Miles traveled (VMT)
Total: 8,672,577,371 miles
Passenger: 7,805,319,634 miles
Commercial: 867,257,737 miles
Delay per VMT: 0.0199 mins/mile

2017 Grand Total and Average

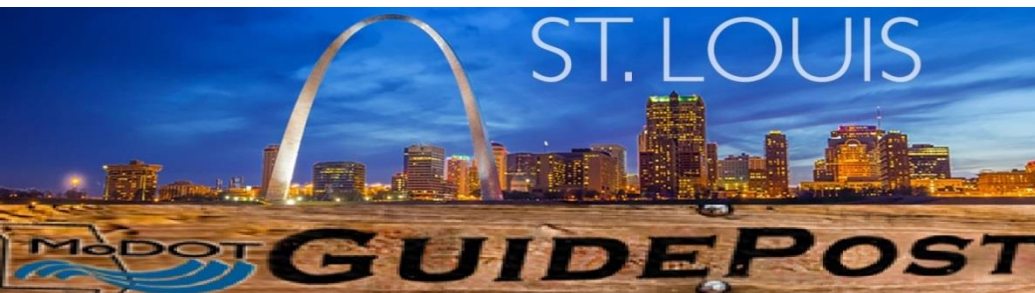
Delay cost:
Total \$66,848,287.70 Per VMT \$0.01
Hours of delay:
Person-hours: 3,088,437h 39m 34s
Vehicle hours: 2,521,173h 35m 58s

Vehicle Miles traveled (VMT)
Total: 8,674,701,227 miles
Passenger: 7,807,231,104 miles
Commercial: 867,470,123 miles
Delay per VMT: 0.0174 mins/mile



EXECUTIVE SUMMARY

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New Freeway Mobility Reporting Detailed For US 40 I-64 Corridor

Average Time To Clear Lanes Improved From A Year Ago

Overturned Tractor Trailers Continue To Cause Problems

Work Zone Delays Confined To Two Projects And An Emergency Repair

Improvements On I-64 At Mason Road Drop This Location From Top 5 Congestion Spots for 2017

ZONING IN

TMS Work Zones:

November 2017: 218

December 2017: 189

Work Zone Impact Breakdown:

■	Major:	3 – 0.9%
■	Moderate:	23 – 7.3%
■	Minor:	286 – 91.8%

WORK ZONE CRASHES: 7

Most Significant Impact Events

Planned Event

Dates: 11-1 / 12-31

Location: Eastbound I-64 – Poplar Street Bridge **Event Detail:** Bridge work 3 lanes closed 25 minutes of additional travel time during non-peak period

Unplanned Event

Date: 11-2

Location: Westbound I-44 before US 50 **Event Detail:** Tractor Trailer crashed through the guardrail, down an embankment, and struck a tree. Resulted in a 16 hour and 53 minute recovery and impacted both peak periods



EXECUTIVE SUMMARY

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Top 5 Congestion Locations / YTD 2016 vs. 2017

	Congestion Locations 2016	*Base Impact	Average Queue Length Miles	Average Daily Duration	Total Duration
1	WB I-64 @ Clayton/Oakland Exit 34	95,999.23	2.39	1h 52 m	28d 09h 12m
2	EB I-64 @ Big Bend Blvd Exit 33	89,326.13	3.19	1h 13m	18d 12h 34m
3	EB I-64 @ Mason Road / Exit 24	87,241.94	2.71	1h 27m	22d 05h 40m
4	EB I-64 @ I-70/I-55/US-40	86,385.17	2.21	1h 33m	23d 15h 14m
5	SB I-270 @ Manchester Road / MO 100	85,991.00	1.46	2h 37m	39d 22h 13m

Locations ranked on *Base Impact (The aggregation of Queue Length over time for congestion originating at each location in mile minutes)

	Congestion Locations 2017	*Base Impact	Average Queue Length Miles	Average Daily Duration	Total Duration
1	EB I-64 @ I-70/I-55/US 40	137,028.44	1.75	3h 51m	57d 22h 05m
2	SB I-270 @ Manchester Road / MO 100	88,745.76	1.42	2h 48m	42d 06h 36m
3	WB I-64 @ Clayton/Oakland Exit 34	83,429.38	2.30	1h 43m	26d 01h 12m
4	EB I-64 @ Big Bend Blvd Exit 33	82,058.35	3.09	1h 08m	17d 06h 05m
5	WB US 40 @ I-70	69,285.25	2.71	1h 11m	17d 20h 28m

Locations ranked on *Base Impact (The aggregation of Queue Length over time for congestion originating at each location in mile minutes)

Average Incident Duration Comparison / 2016 vs. 2017

Month	Average Incident Duration (Minutes : Seconds)	2016	2017
November	Lane Clearance	25:27	25:19
December	Lane Clearance	29:22	26:17
November	Incident Clearance	28:21	28:16
December	Incident Clearance	32:22	29:47

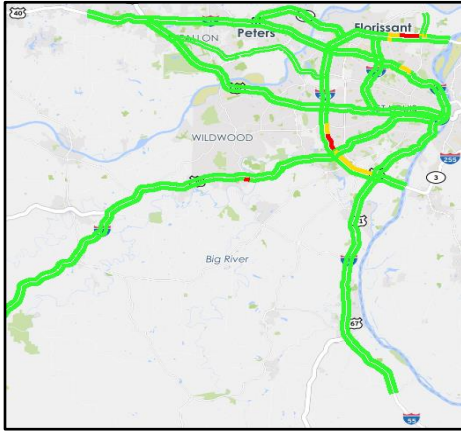


FREEWAY MANAGEMENT

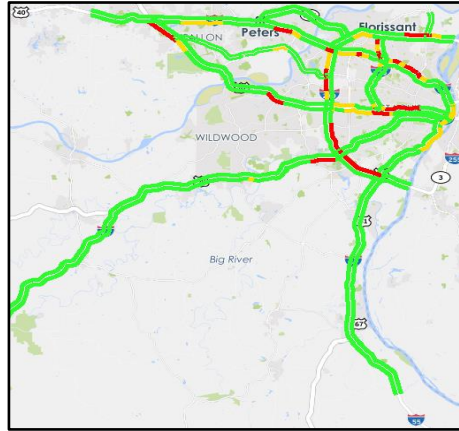
Overall AM Mobility **INCREASED**

AM Peak Period Mobility November/December 2016

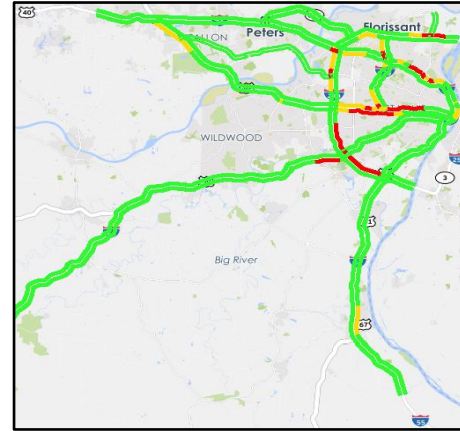
6 am – 7 am



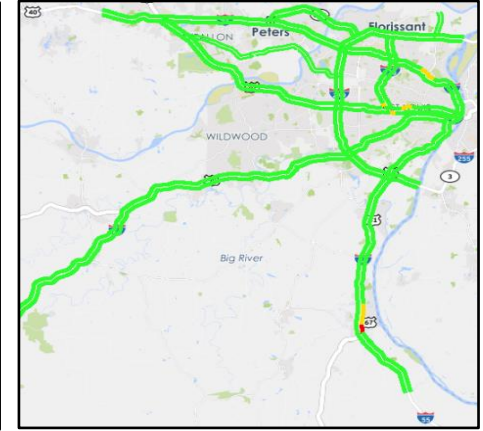
7 am – 8 am



8 am – 9 am



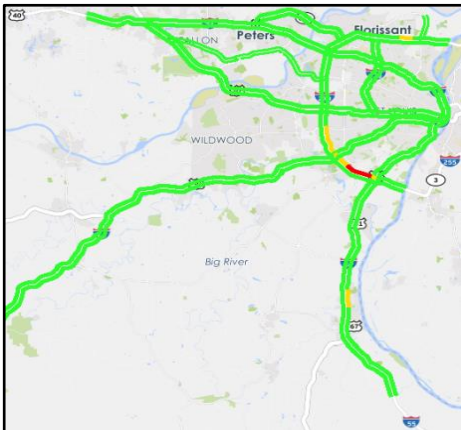
9 am – 10 am



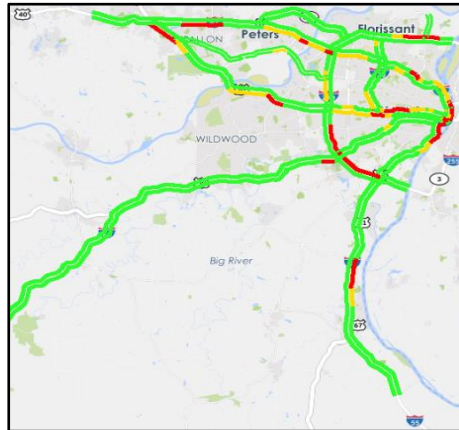
LEGEND (Speed Index)
High Mobility (.90+)
Medium Mobility (.80-.90)
Low Mobility (<.80)

AM Peak Period Mobility November/December 2017

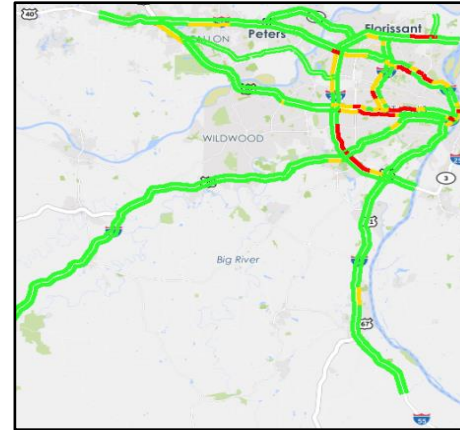
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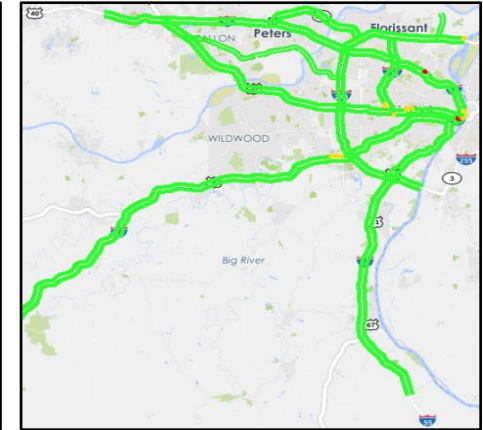
7 am – 8 am



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Highlighted Corridor

US 40 / I-64

**Comparing AM November/December 2016
to AM November/December 2017**

AM Eastbound US 40 / I-64 Mobility DECREASED 2016 → 2017

AM Westbound US 40 / I-64 Mobility INCREASED 2016 → 2017

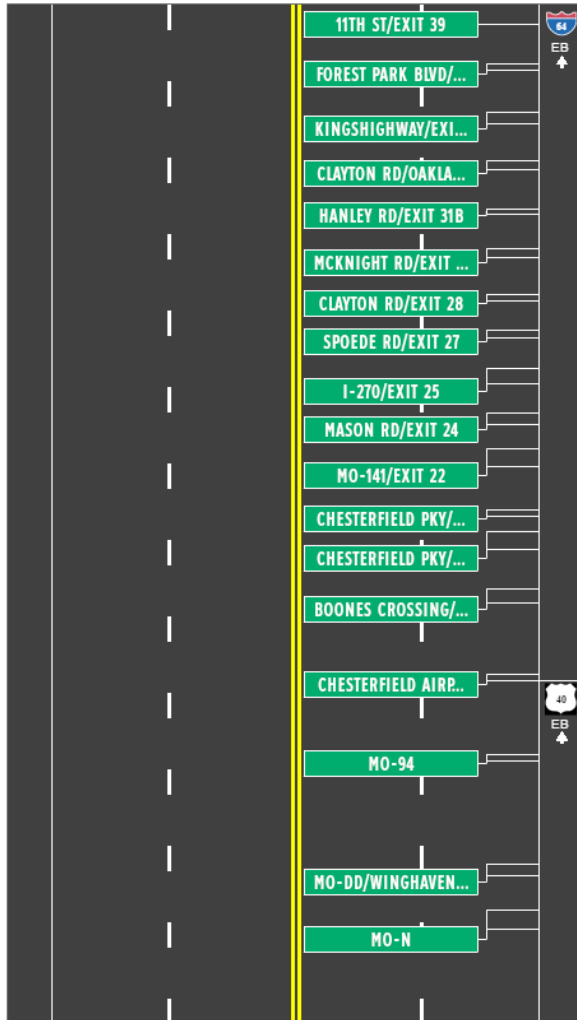


FREEWAY MANAGEMENT

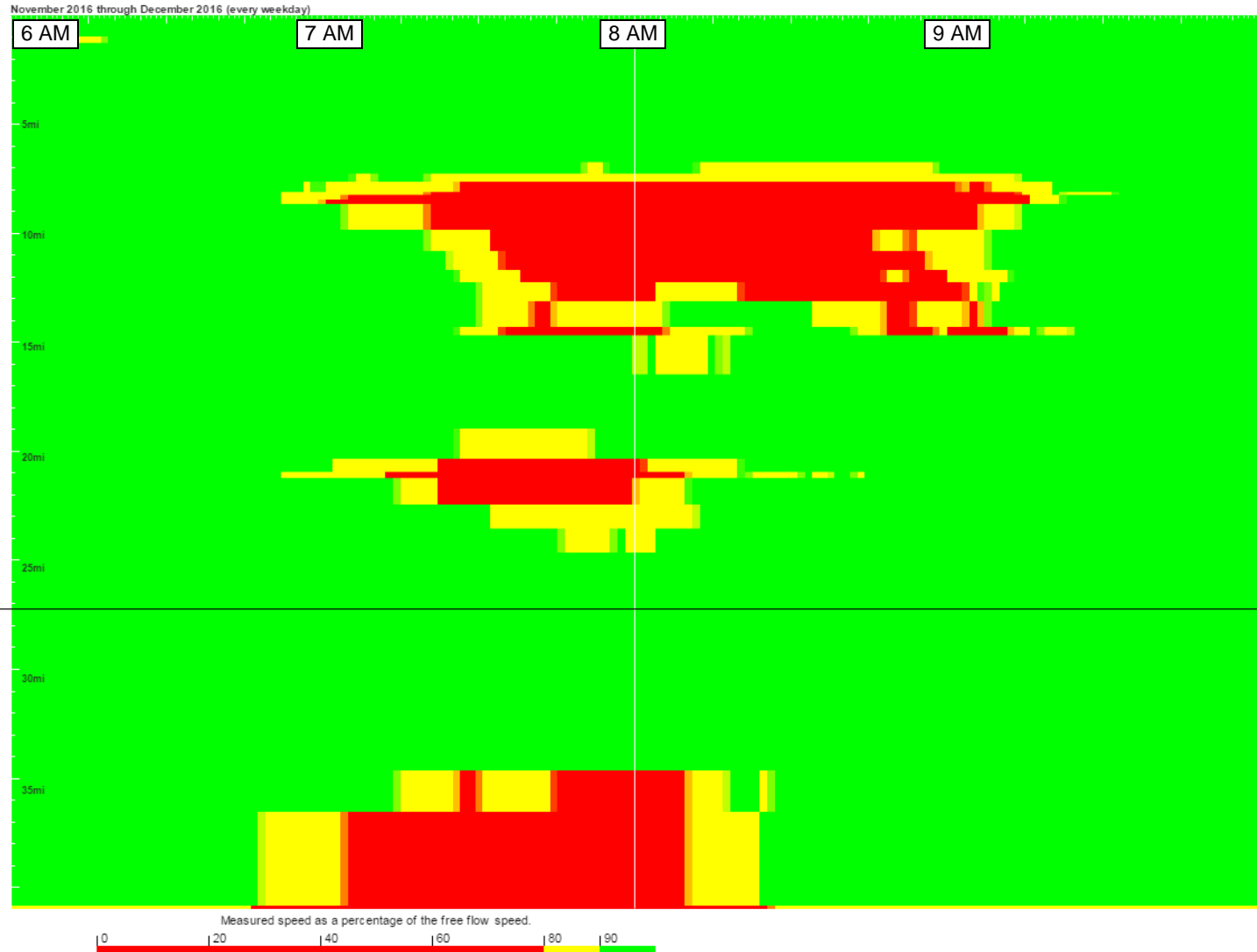
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AM Eastbound 2016



Congestion on I-64 Eastbound and US-40 Eastbound using HERE data
Averaged by 2 minutes for November 2016 through December 2016 (every weekday)

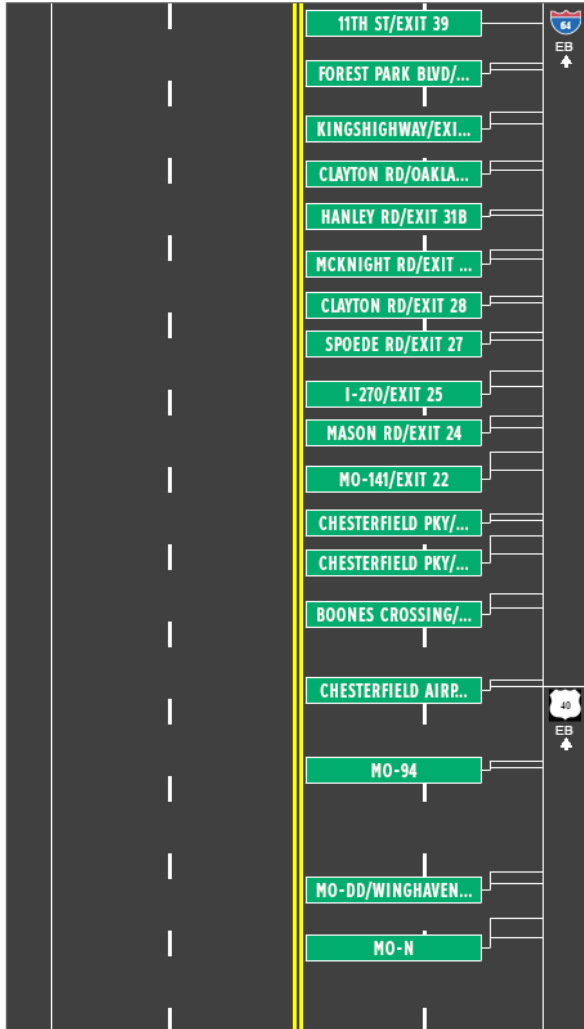




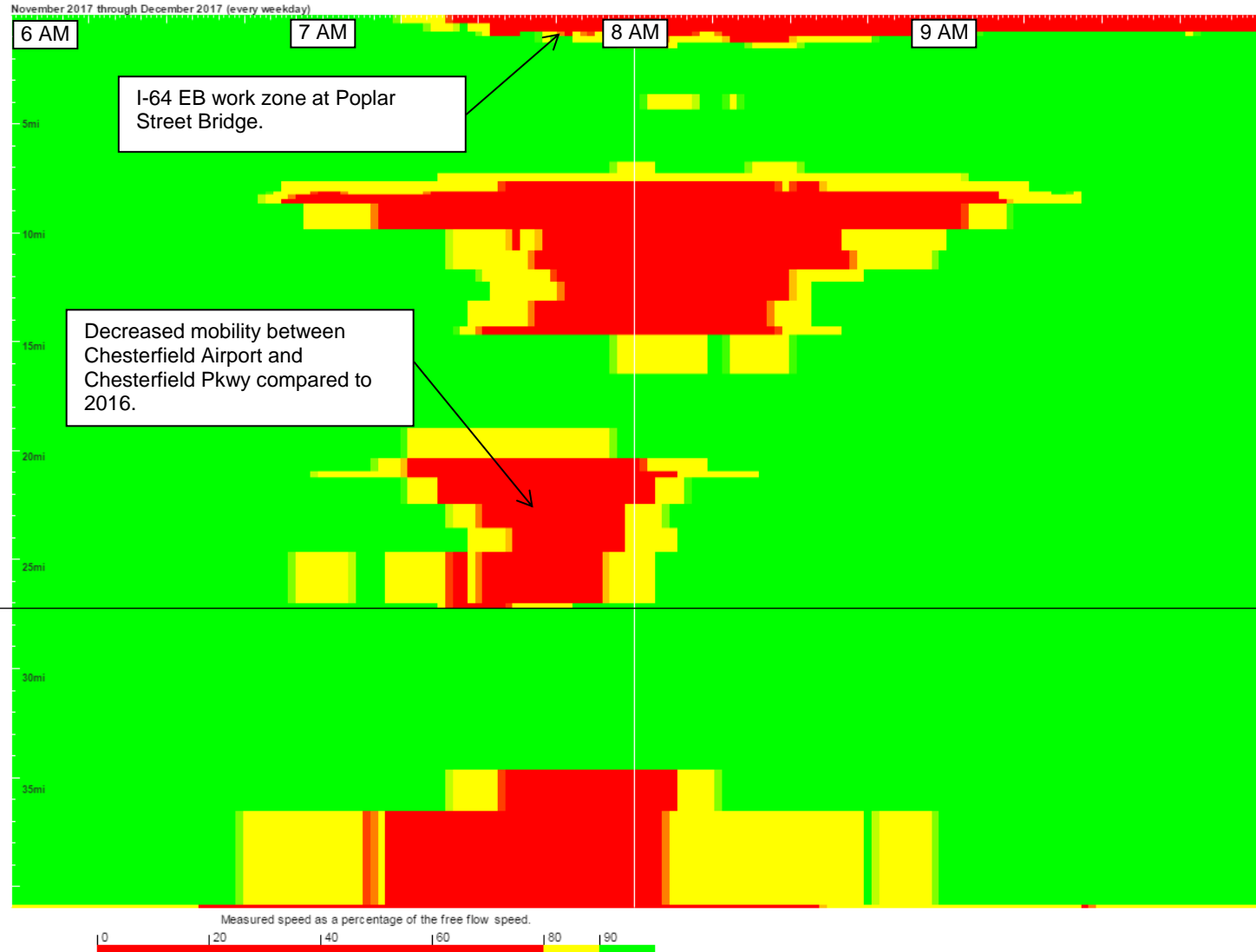
FREEWAY MANAGEMENT

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FREEWAY MANAGEMENT

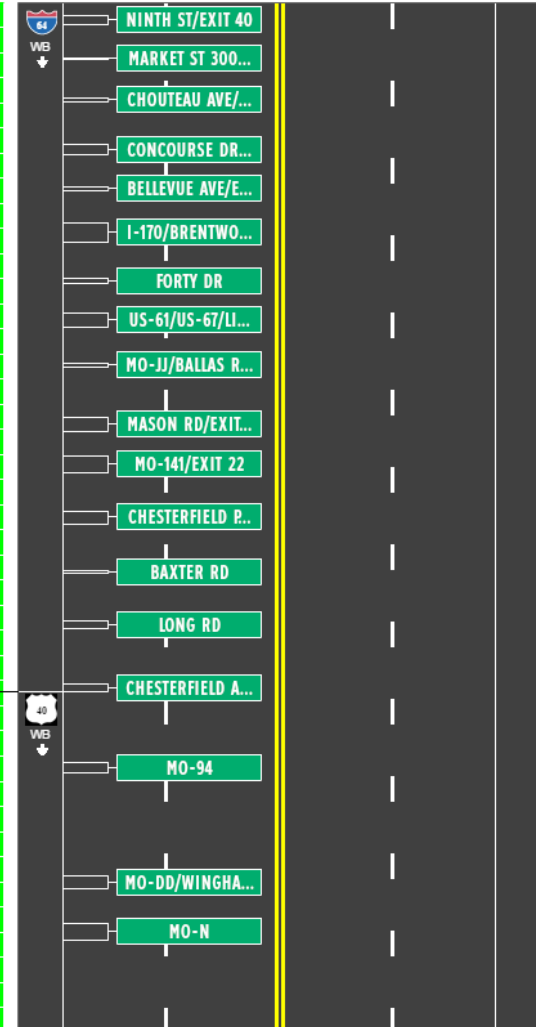
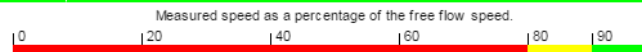
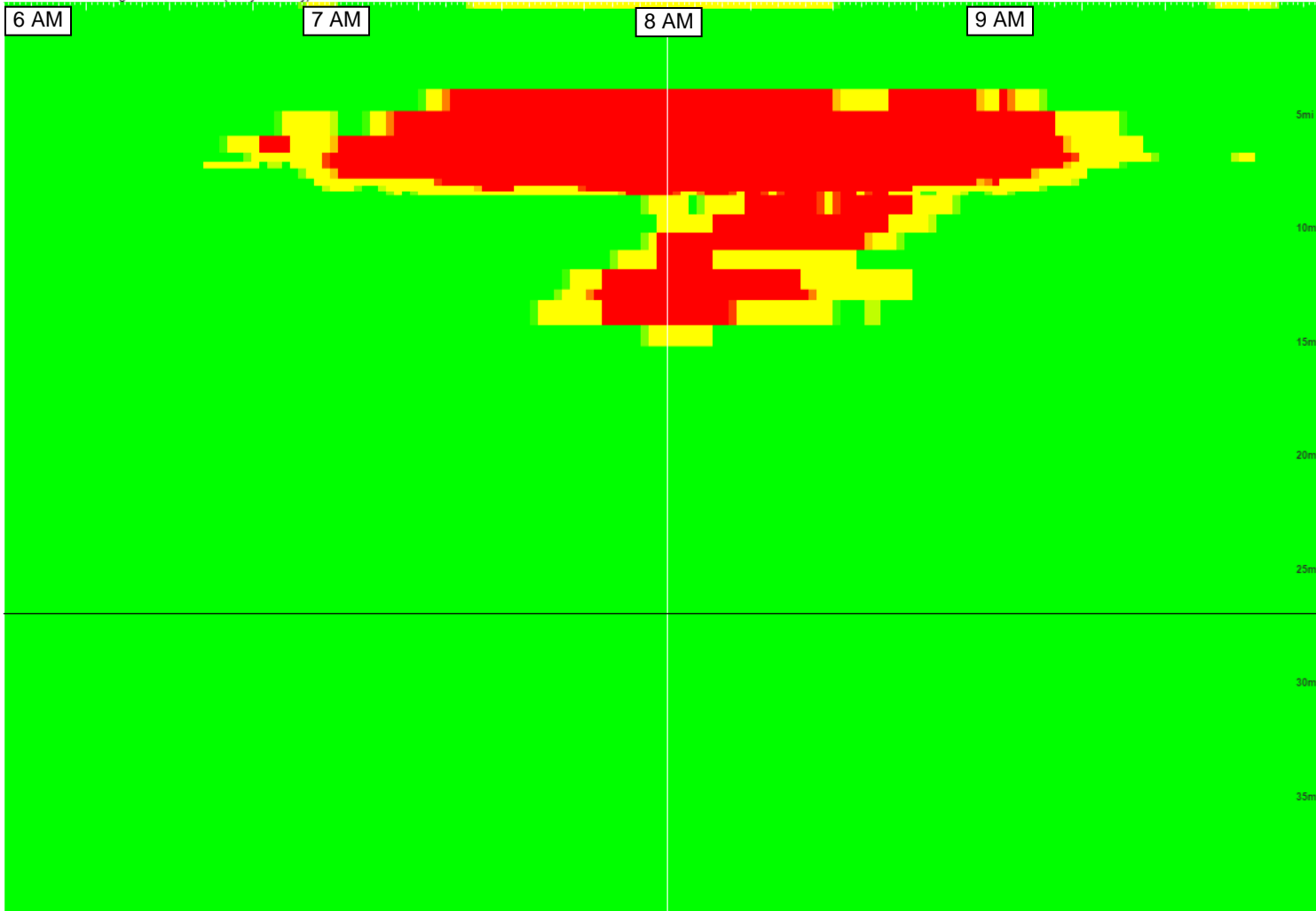
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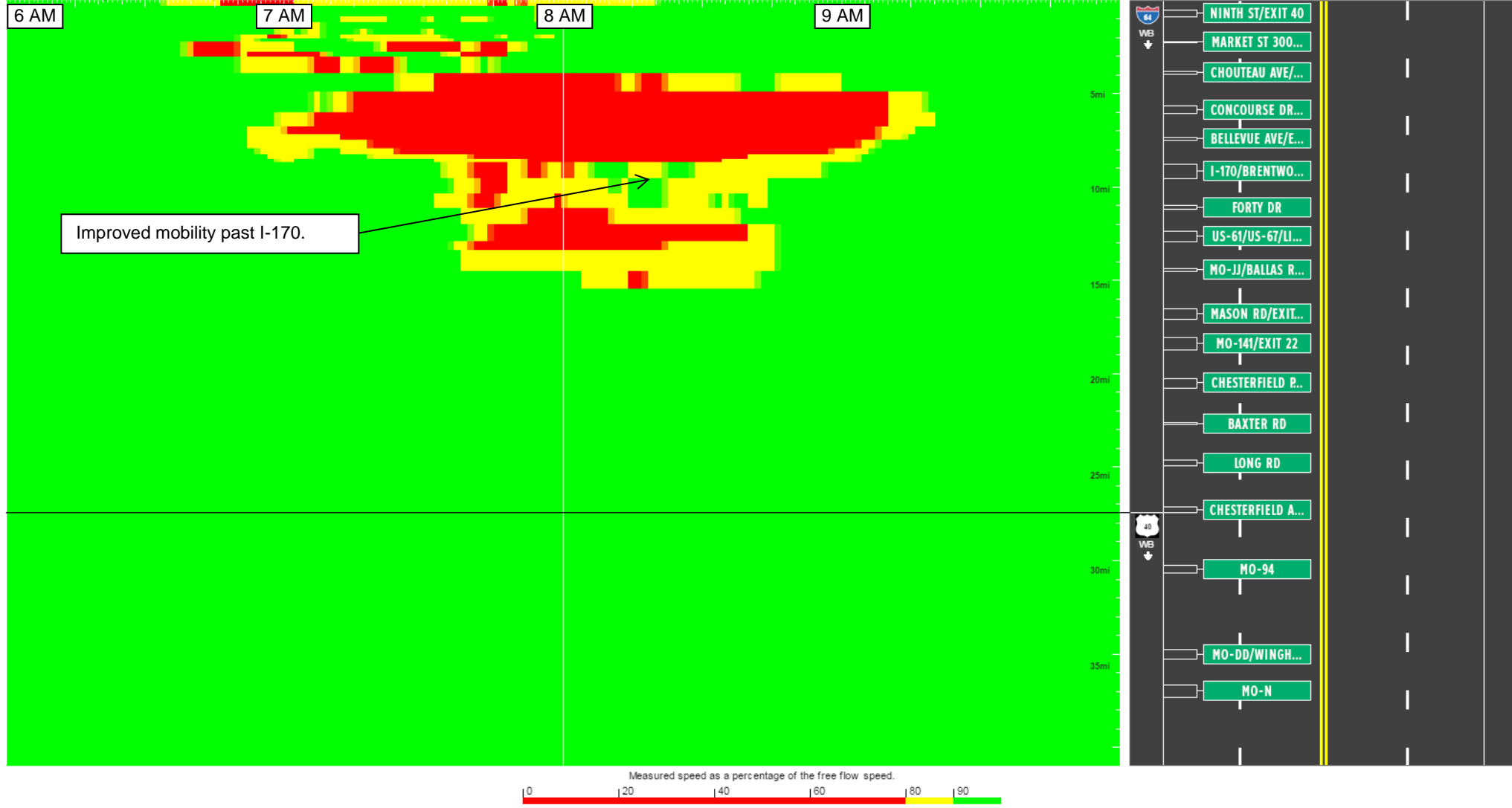
FREEWAY MANAGEMENT

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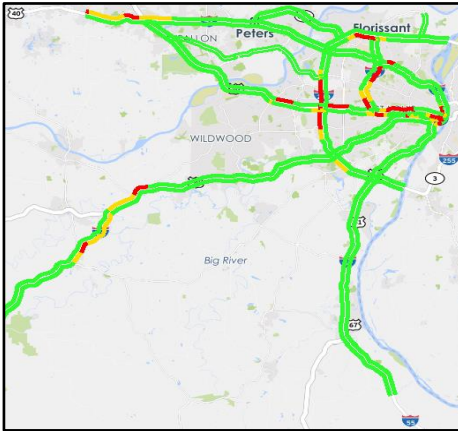
FREEWAY MANAGEMENT

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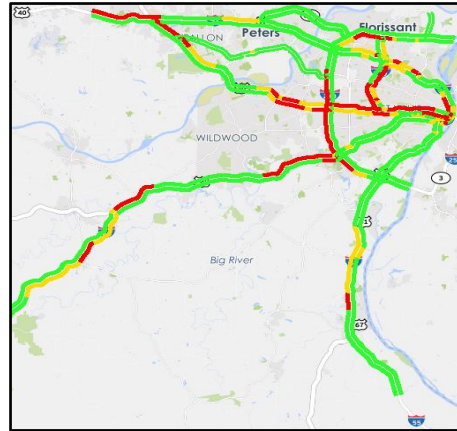
Overall PM Mobility **INCREASED**

PM Peak Period Mobility November/December 2016

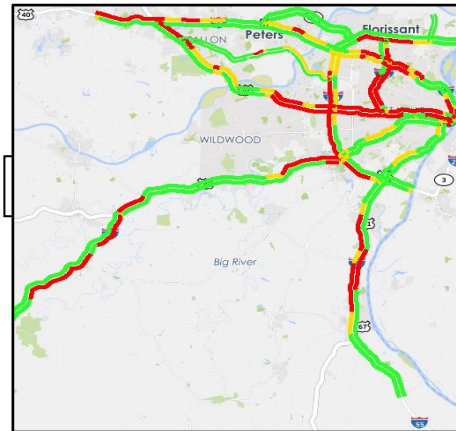
3 pm – 4 pm



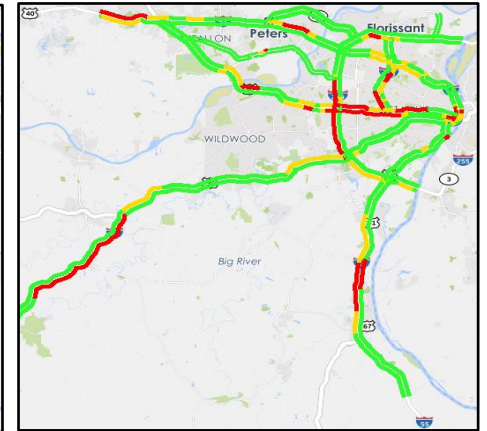
4 pm – 5 pm



5 pm – 6 pm



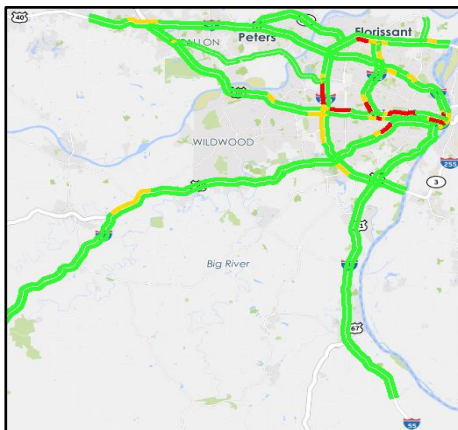
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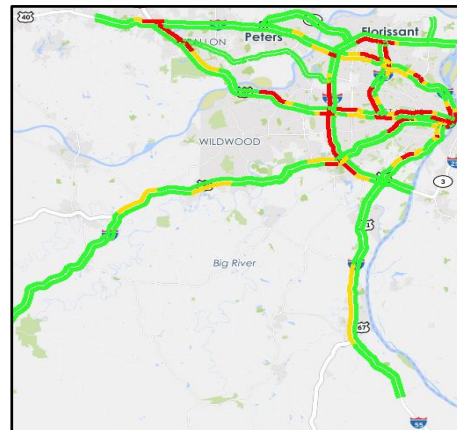
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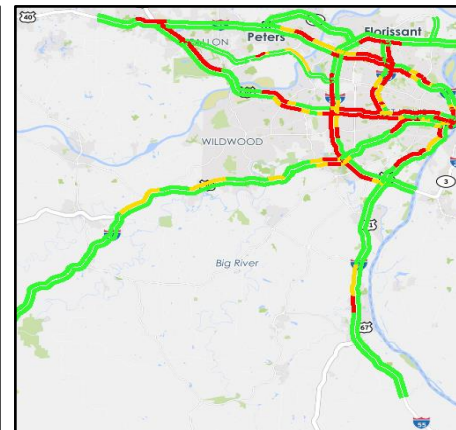
3 pm – 4 pm



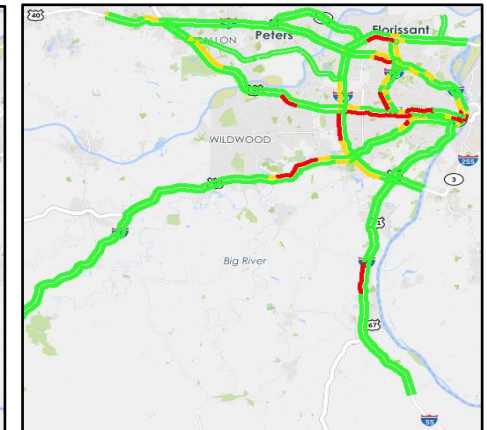
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Highlighted Corridor

US 40 / I-64

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PM Eastbound US 40 / I-64 Mobility INCREASED 2016 → 2017

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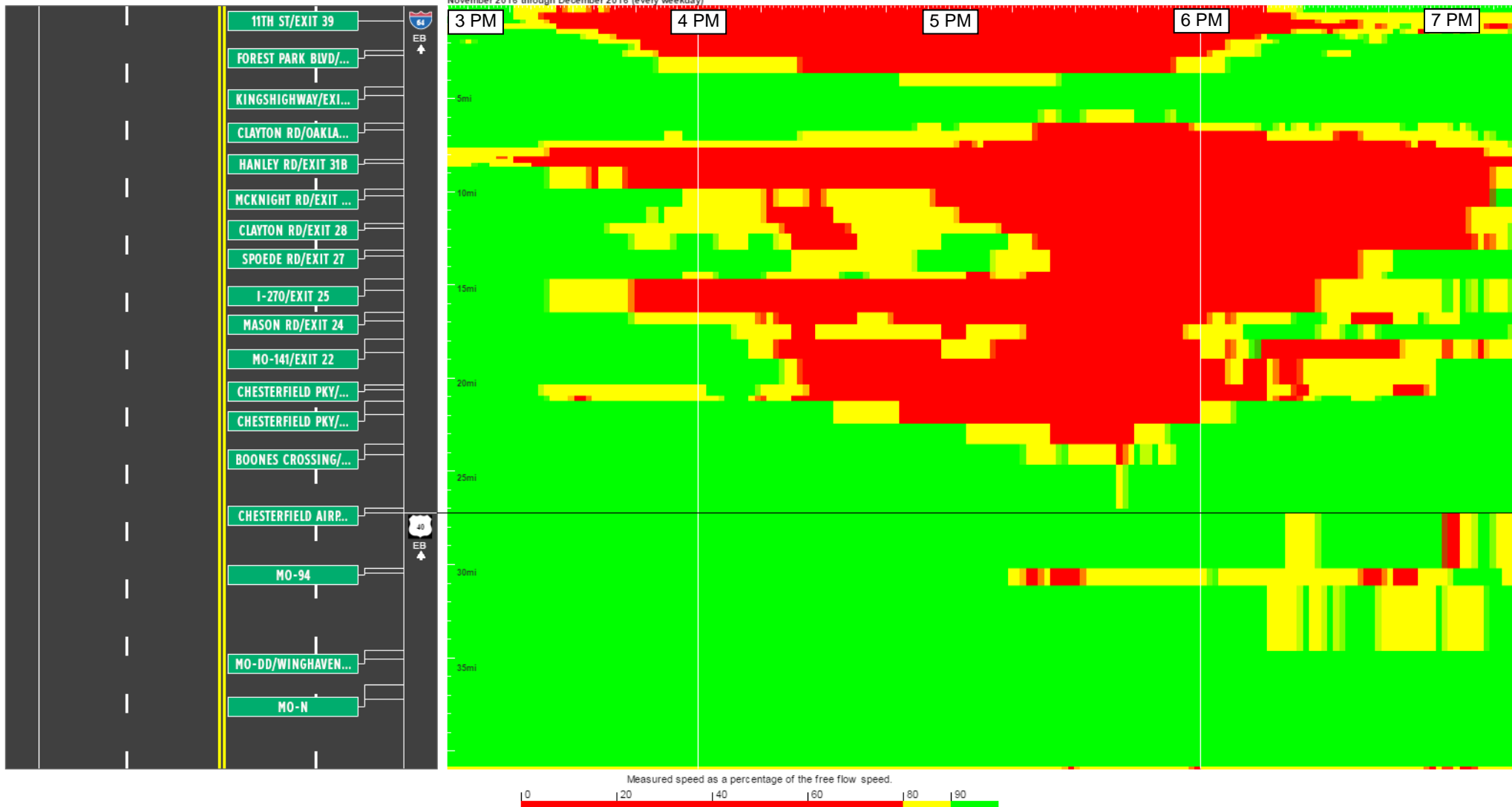
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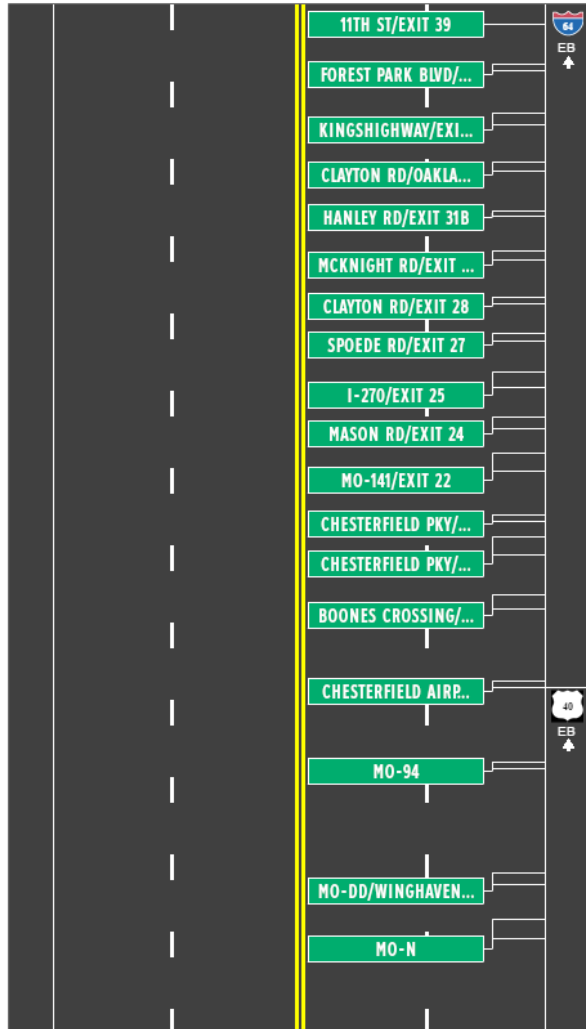




FREEWAY MANAGEMENT

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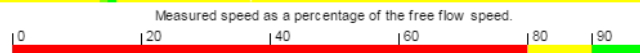
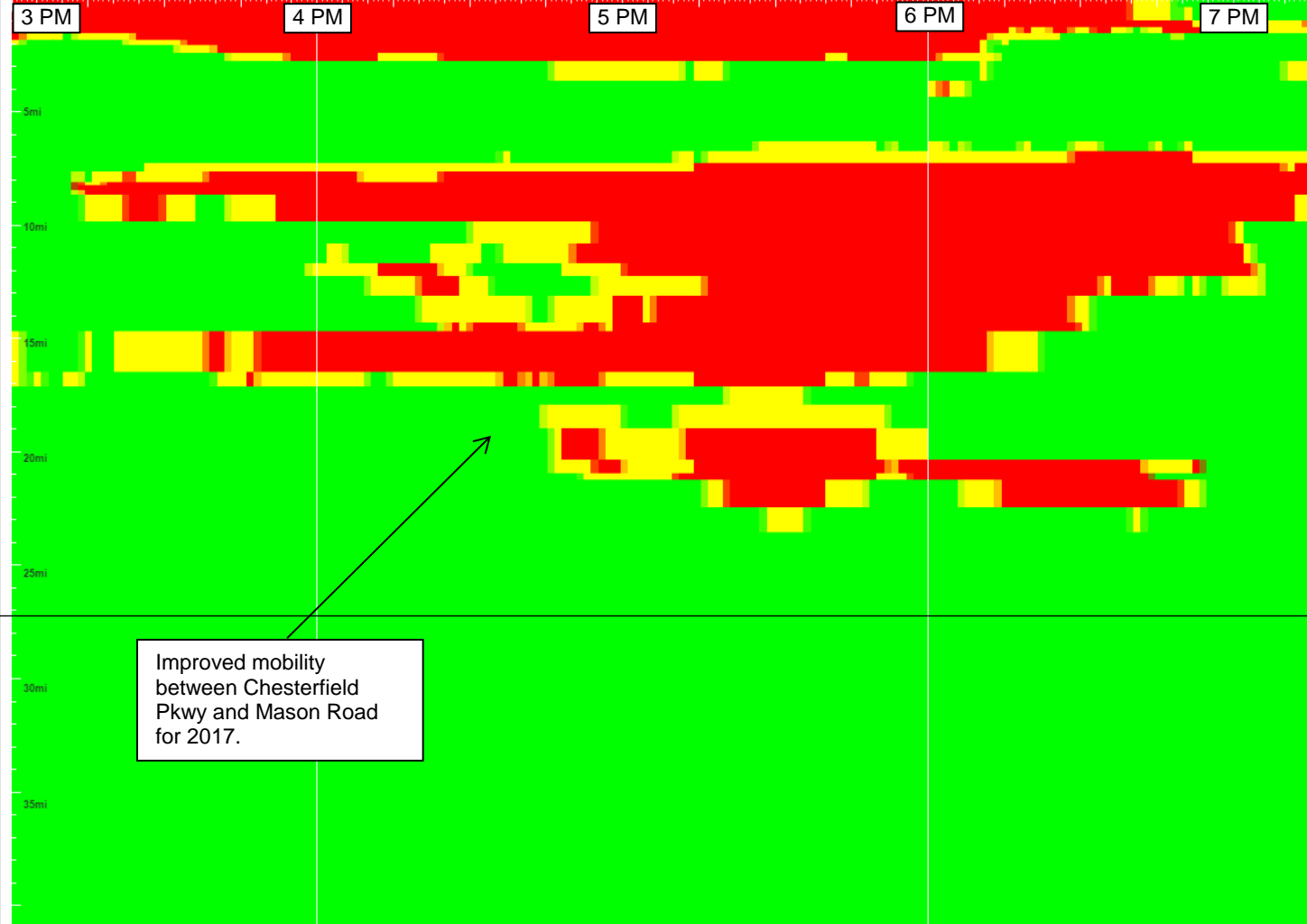
PM Eastbound 2017



Congestion on I-64 Eastbound and US-40 Eastbound using HERE data

Averaged by 2 minutes for November 2017 through December 2017 (every weekday)

November 2017 through December 2017 (every weekday)





FREEWAY MANAGEMENT

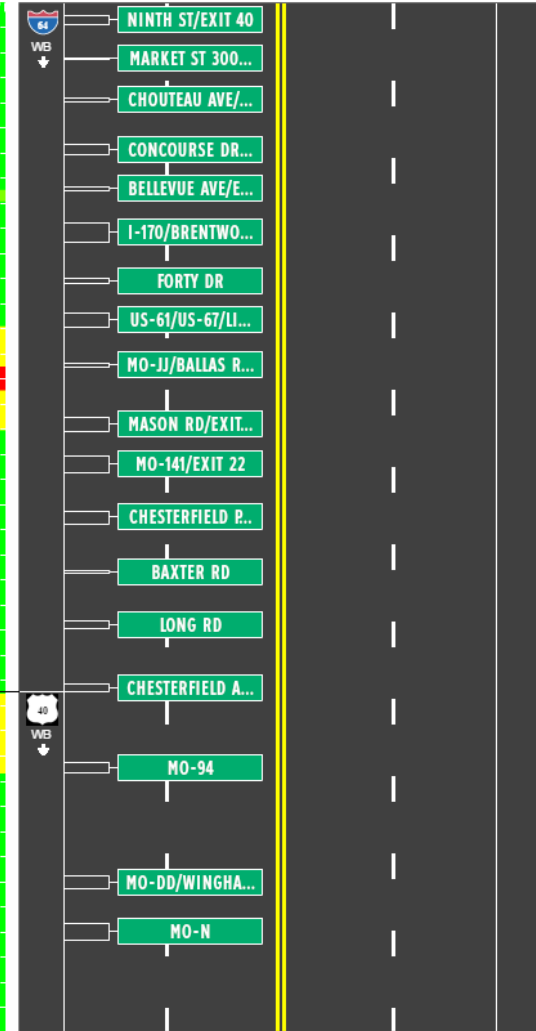
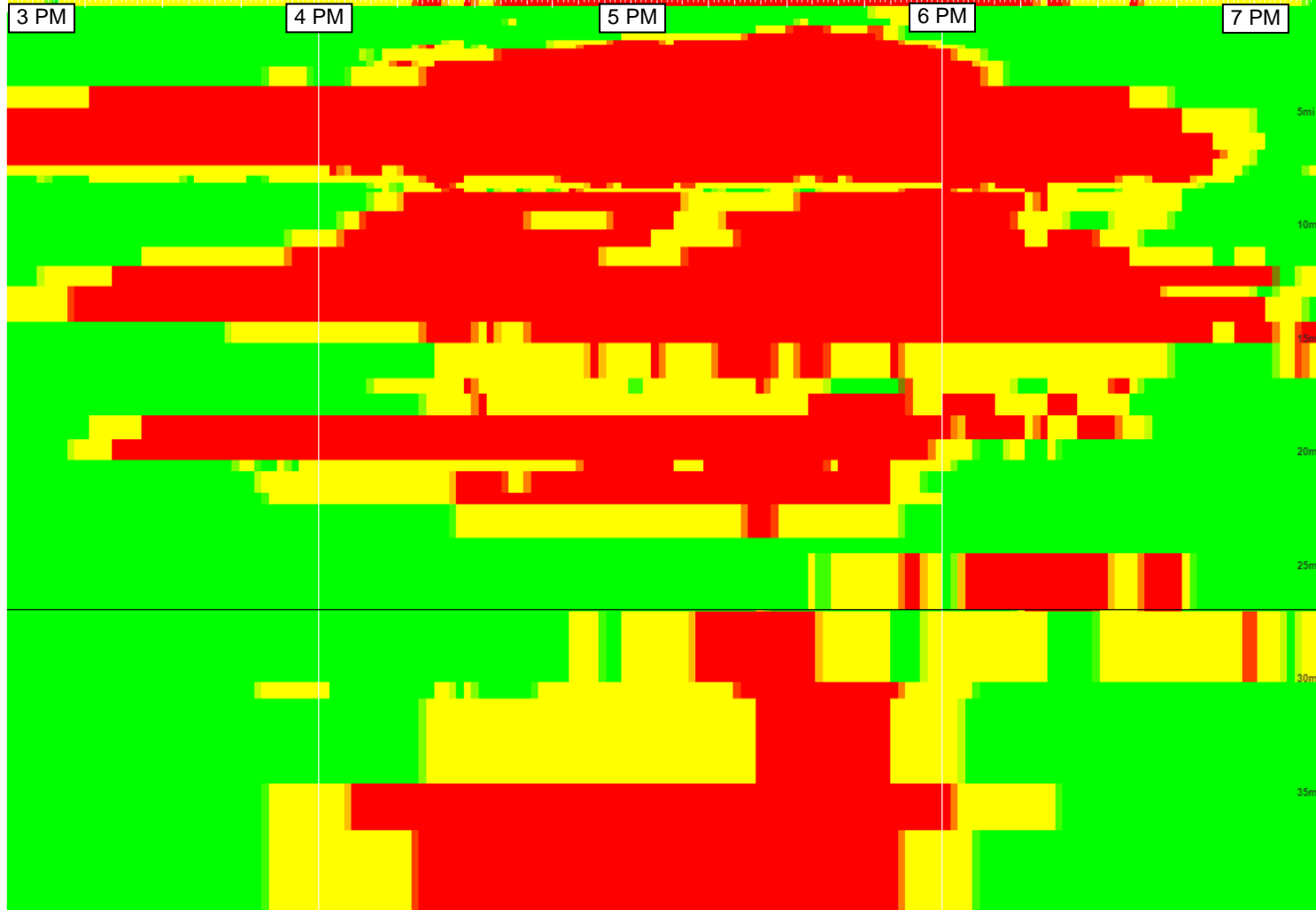
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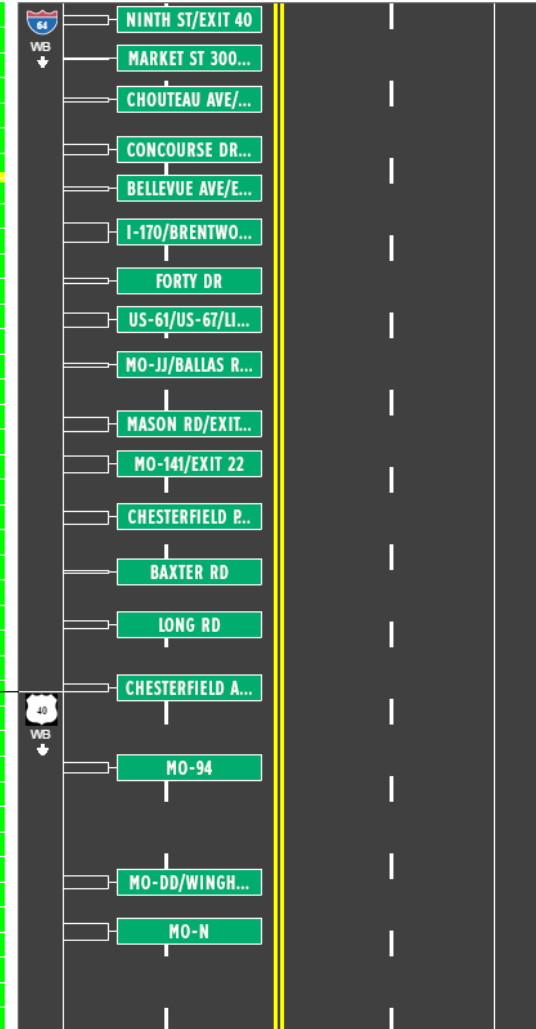
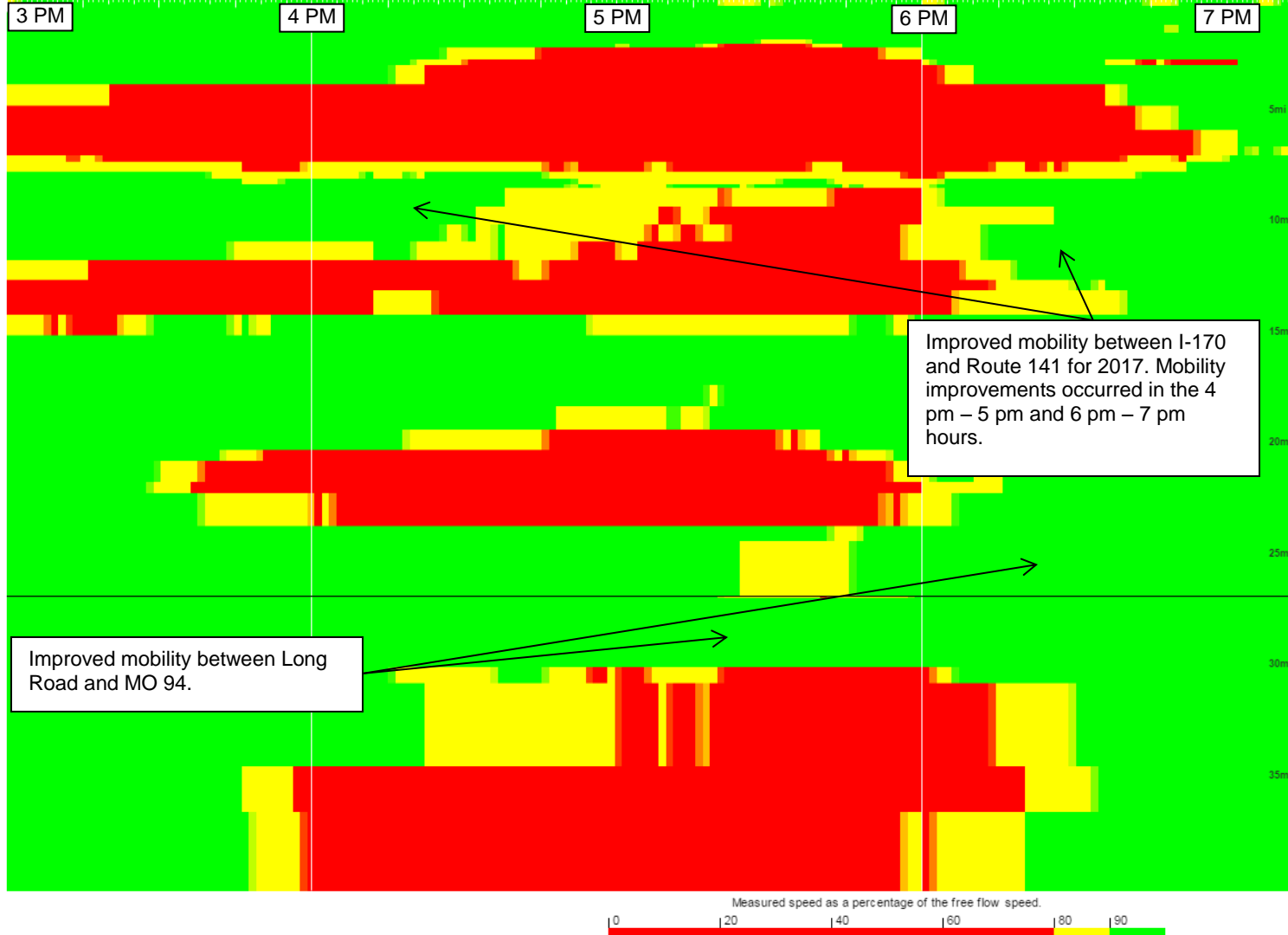
FREEWAY MANAGEMENT

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November 2017 through December 2017 (every weekday)





TMC Observed Work Zones

November 2017		December 2017	
Level of Travel Time Impact	Number of Work Zones	Level of Travel Time Impact	Number of Work Zones
Major Impact	3	Major Impact	0
Moderate Impact	10	Moderate Impact	13
Minor Impact	144	Minor Impact	142
Total	157	Total	155

**Impact Levels described in Data Key:*

SL Mobility Rating:

- ◆ Nov 2017: 94%
- ◆ Dec 2017: 96%
- ◆ Goal: 91%

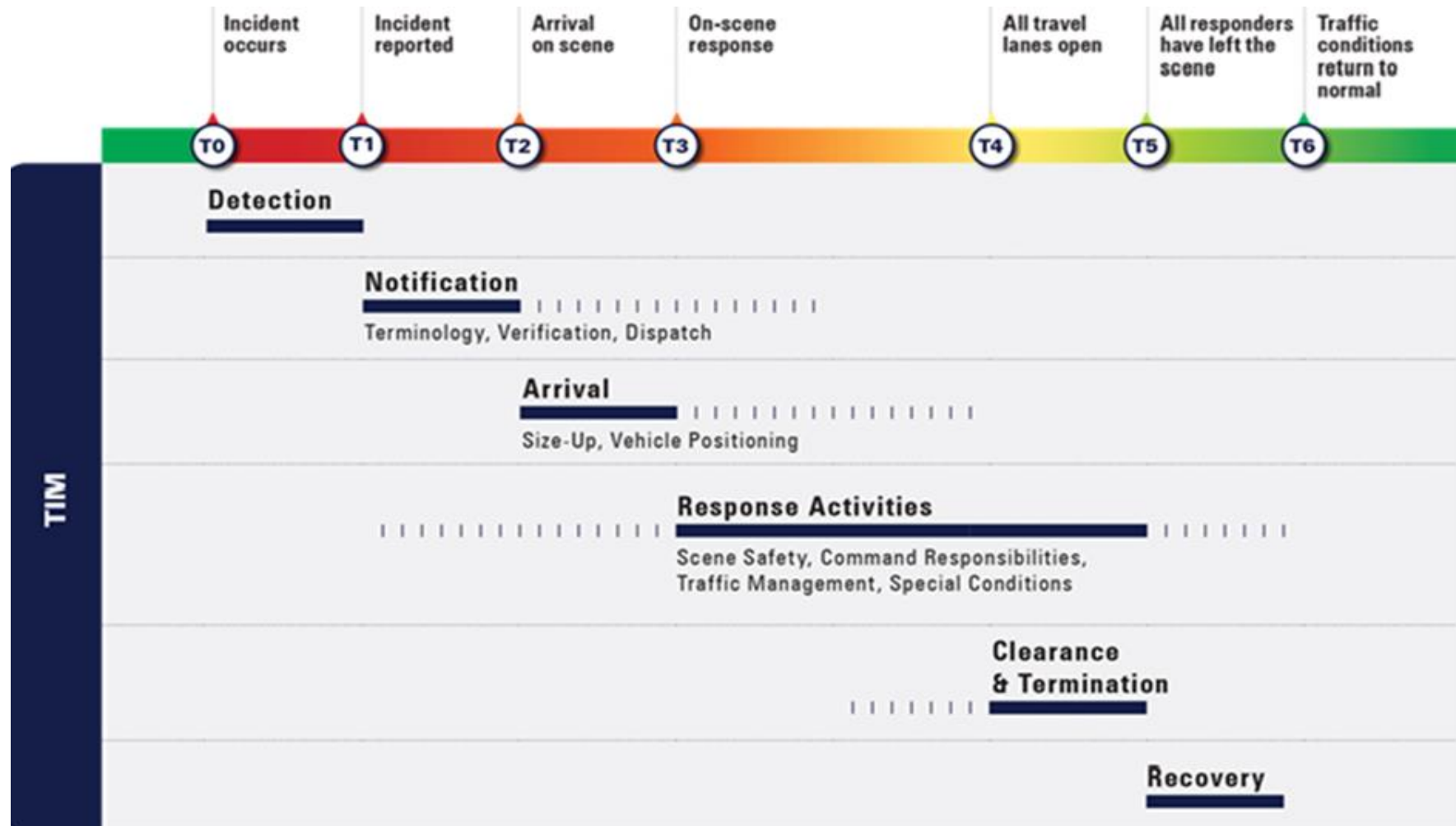
SL Visibility levels:

- ◆ Nov 2017: 99%
- ◆ Dec 2017: 92%
- ◆ Goal: 91%

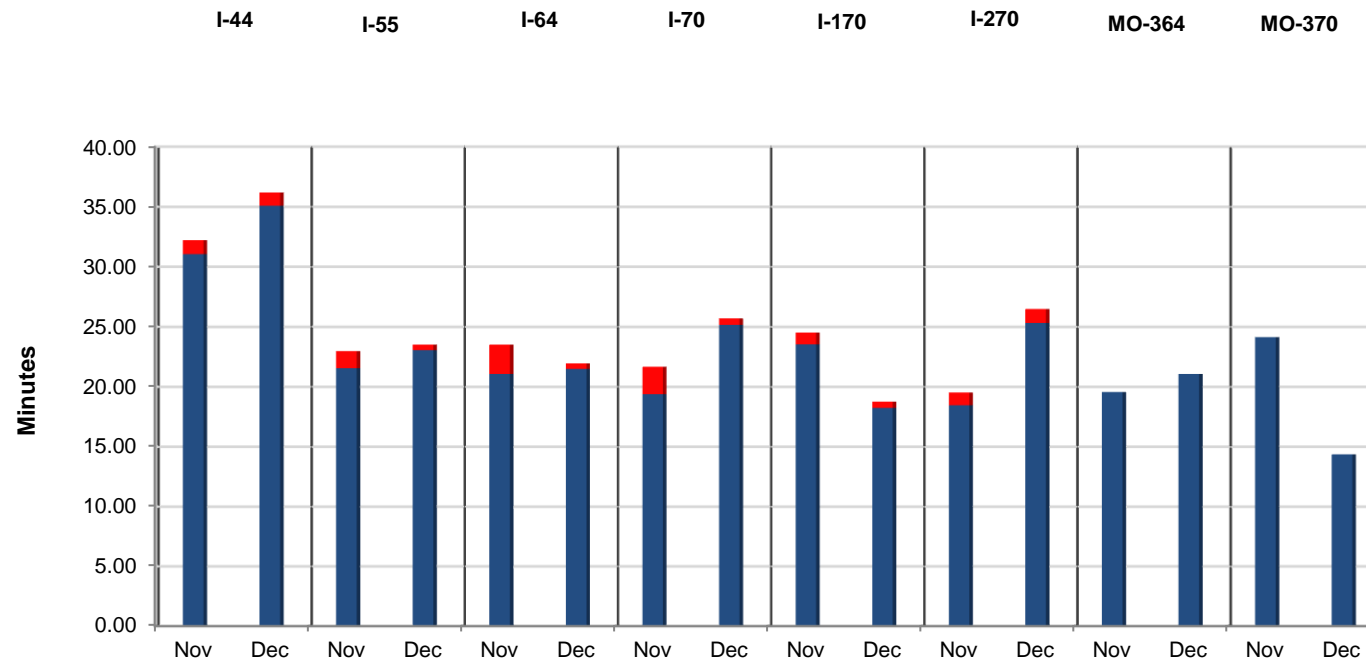


Additional Travel Time Impacts through Work Zones

Major Impact (15 Minutes or Above):	#	Moderate Impact (10-14 Minutes):	#	#
11/1 – 12/31 (Daily) Eastbound I-64 – Poplar Street Bridge 3 right lanes:			1	19
<ul style="list-style-type: none"> Closed leaving one lane of traffic open eastbound before Poplar Street Bridge daily All mitigation efforts were in use RITIS data recorded additional travel times up to 25 minutes during non-peak hours 				
11/7 – (Tuesday) Southbound I-270 — Dorsett two lanes closed:			1	2
<ul style="list-style-type: none"> Emergency joint repair through PM peak All mitigation efforts were in use RITIS data recorded additional travel times up to 48 minutes 				
11/7 (Tuesday) Eastbound I-64 – Long Road reduced to one-lane:			1	2
<ul style="list-style-type: none"> Traffic reduced to one lane during daytime Contacted inspector for mitigation but could not open lanes because they were waiting on concrete to cure RITIS data recorded additional travel times up to 41 minutes 				



November 2017 vs. December 2017 Incidents Summary



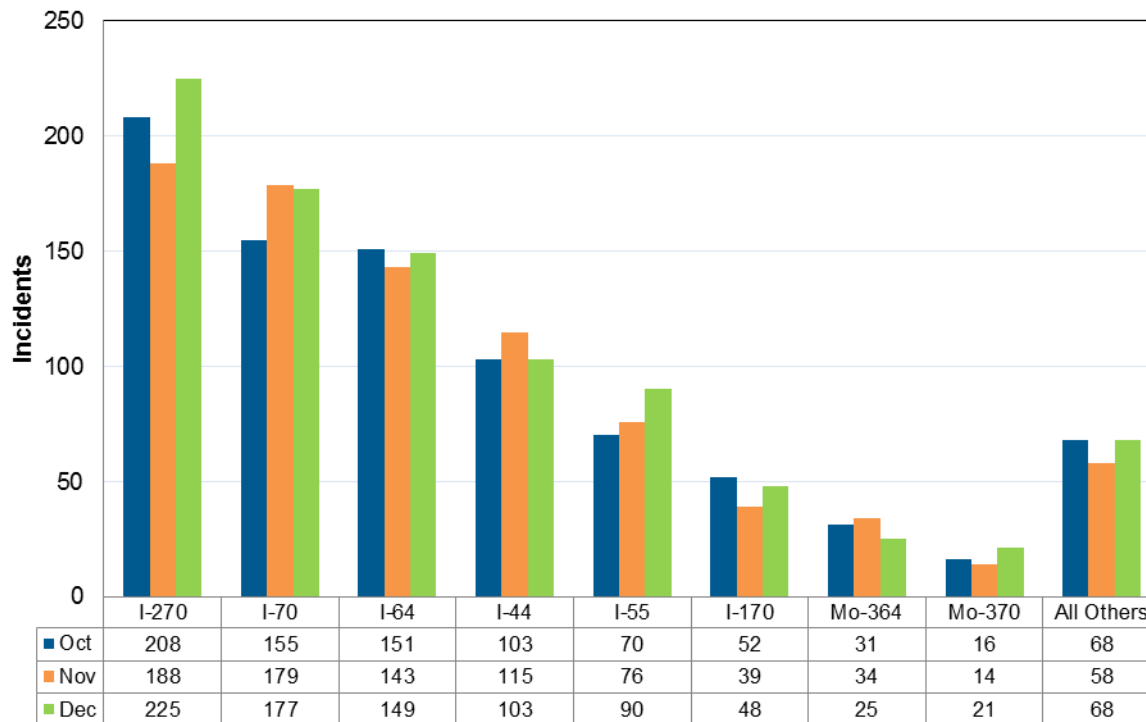
■ Average Time for Backup to Clear = $T6 - T4$

■ Average Time to Clear Incident from Lanes = $T4 - T1$



Total Number of Incidents: October: 854 / November: 846 / December: 906

**Total Number of
Lane Blocking Incidents**



Major Impact Incidents

November 2017 vs. December 2017
(4) (3)

Fatal Incidents

November 2017 vs. December 2017
(6) (6)

Tractor Trailer Incidents

November 2017 vs. December 2017
(47) (44)



INCIDENT MANAGEMENT

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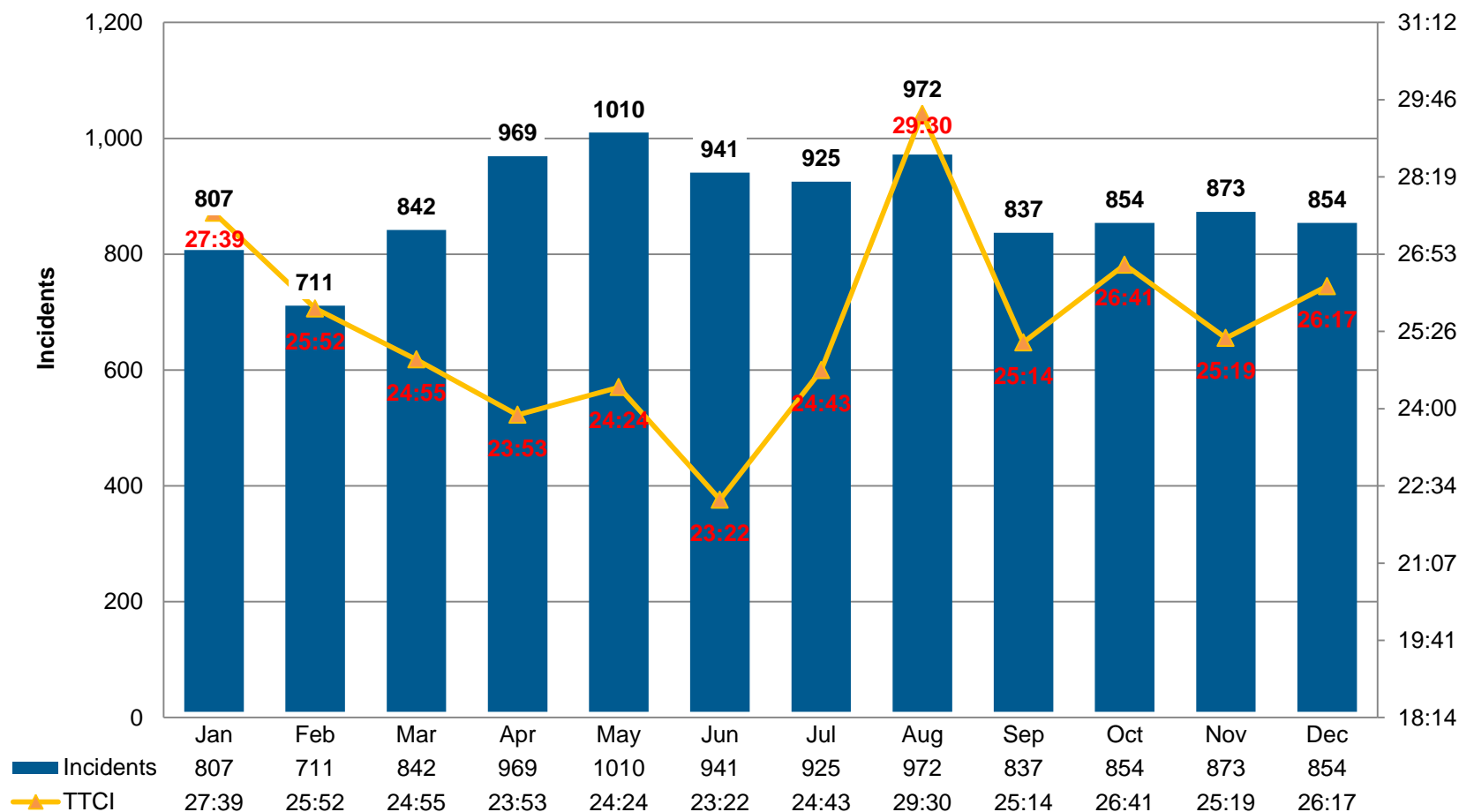


Lane Blocking Incidents by Freeway November and December 2017

Interstate	Month	Number of Incidents	Average Time to Clear Incident from Lanes = T4 - T1	Average Time for Backup to Clear = T6 - T4	Freeway Miles	Incidents per Mile
I-44	Nov	115	31:06	01:16	33	3.48
I-44	Dec	149	35:08	01:11	33	4.52
I-55	Nov	76	21:55	01:43	23	3.3
I-55	Dec	90	23:05	00:47	23	3.91
I-64	Nov	143	21:08	02:43	40	3.58
I-64	Dec	149	21:49	00:47	40	3.73
I-70	Nov	179	19:38	02:29	38	4.71
I-70	Dec	177	25:16	00:55	38	4.66
I-170	Nov	39	23:53	01:00	11	3.55
I-170	Dec	48	18:24	00:52	11	4.36
I-270	Nov	188	18:47	01:05	36	5.22
I-270	Dec	225	25:53	01:16	36	6.25
MO-364	Nov	34	19:57	00:00	11	3.09
MO-364	Dec	25	21:07	00:00	11	2.27
MO-370	Nov	14	24:15	00:00	13	1.08
MO-370	Dec	21	14:37	00:00	13	1.62
Total	Nov/Dec	1672	22:52	01:00	410	4.08

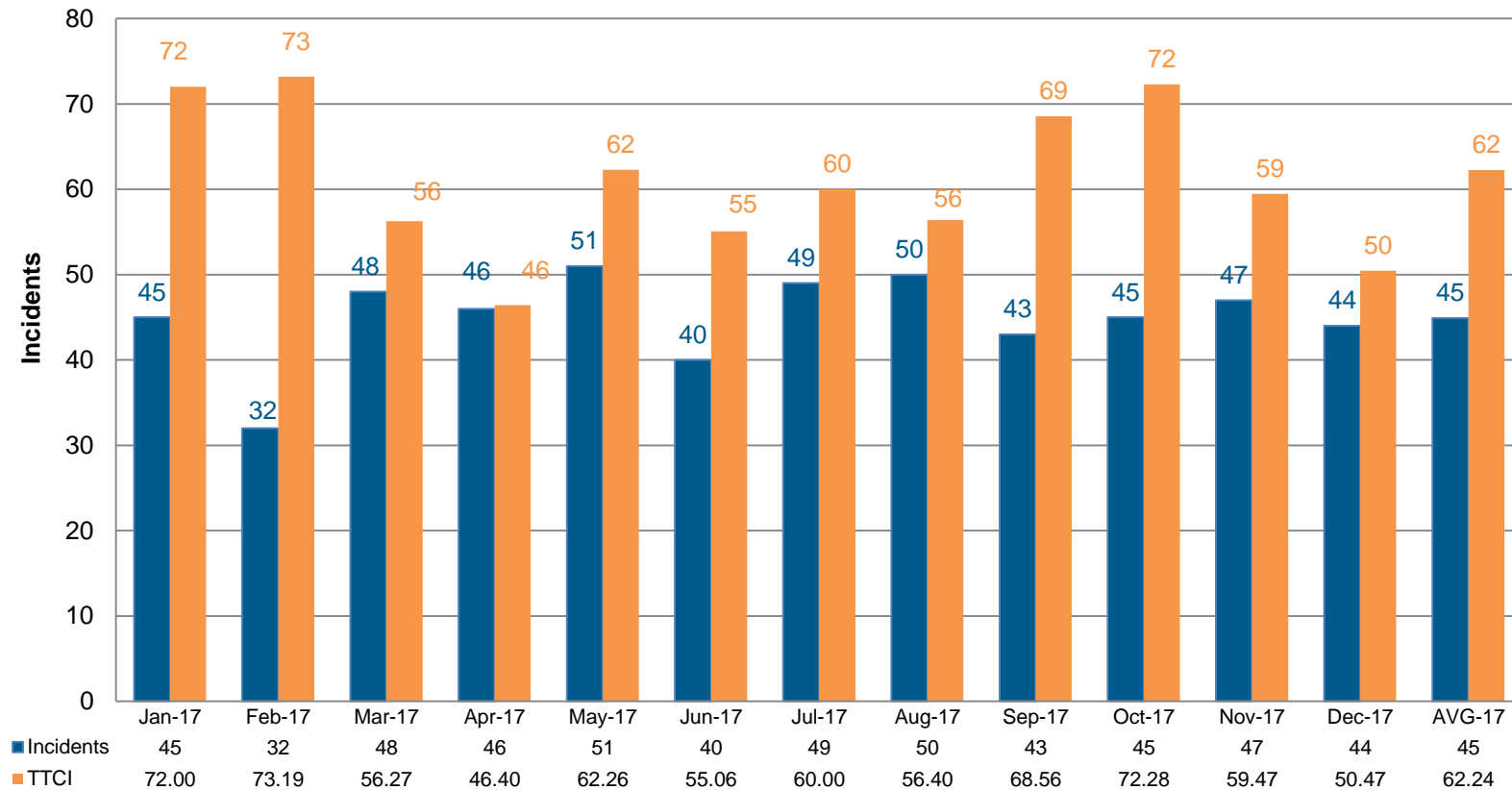


2017 Number of Incidents and Time to Clear Lanes





2017 Number of Tractor Trailer Incidents / Time to Clear

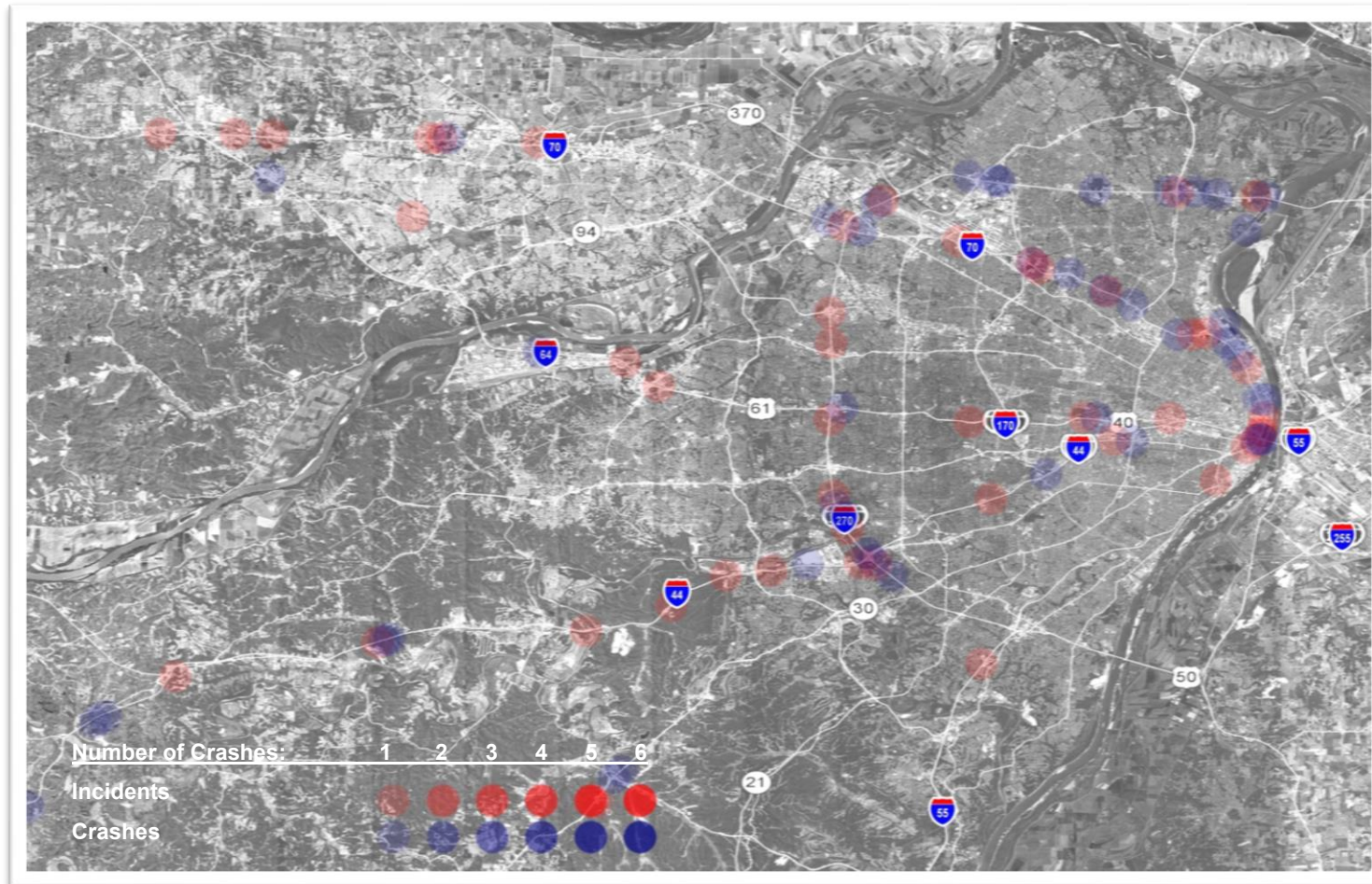




2017 Tractor Trailer Incidents by Route

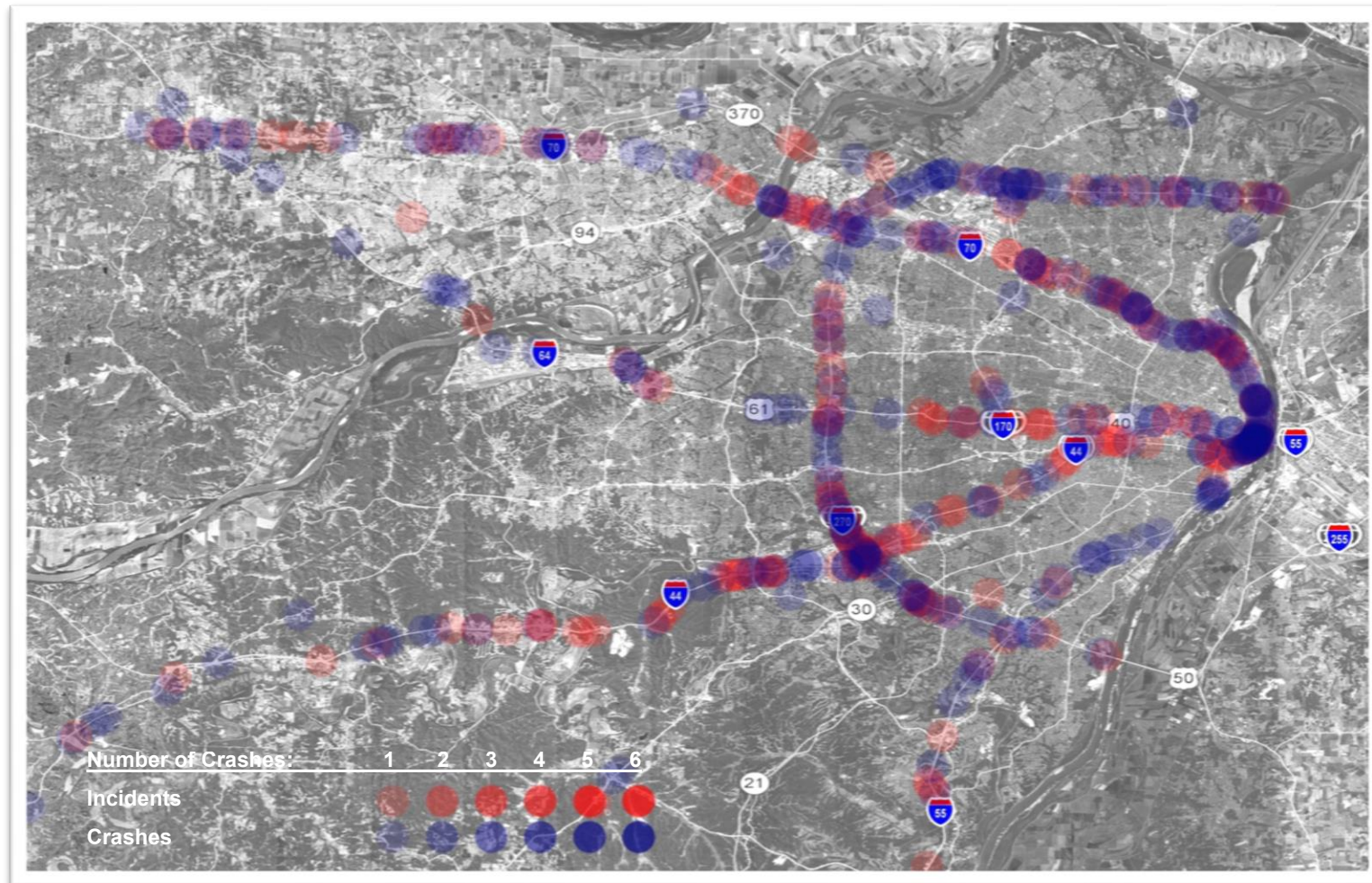
2017	I-44	I-55	I-64	I-70	I-170	I-255/I270	Route 364	Route 370	Other	Total
Jan	11	4	4	11	0	15	0	0	0	45
Feb	10	2	4	6	1	9	0	0	0	32
Mar	12	7	7	12	1	7	0	0	2	48
Apr	16	3	5	10	1	7	0	1	3	46
May	11	8	2	15	0	12	0	0	3	51
Jun	15	3	1	6	1	11	0	1	2	40
Jul	19	5	7	11	1	6	0	0	0	49
Aug	7	4	9	11	1	13	0	1	4	50
Sep	9	1	6	11	2	11	0	1	2	43
Oct	6	6	2	20	1	6	0	2	2	45
Nov	12	3	7	13	0	11	0	0	1	47
Dec	13	3	3	11	0	10	1	0	3	44
Year Total	141	49	57	137	9	118	1	6	22	540

November 2017 – December 2017 Tractor Trailer Incidents Map





January 2017 – December 2017 Tractor Trailer Incidents Map





INCIDENT MANAGEMENT

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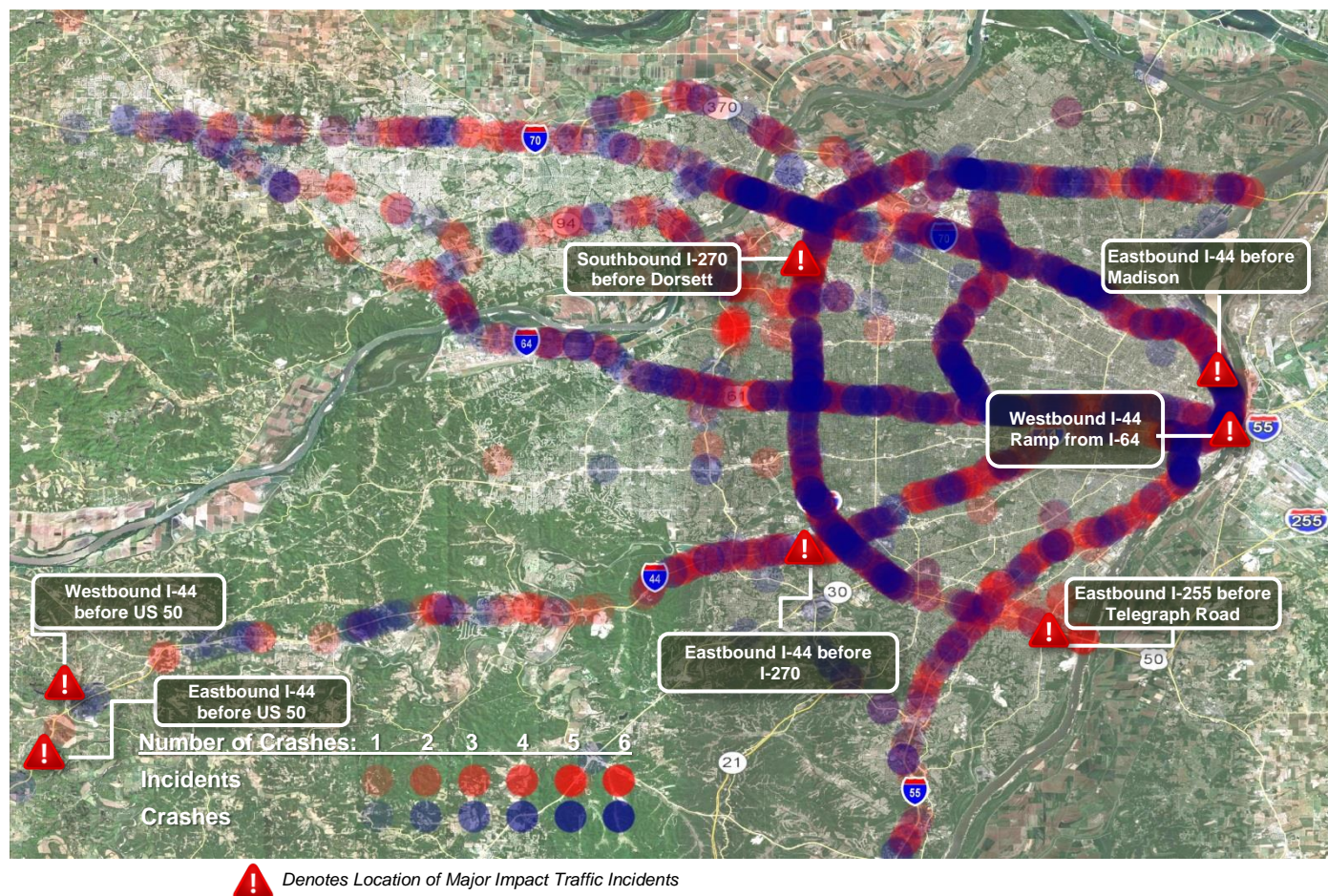
Incidents over Two Hours November / December 2017

Incidents in red denote high mobility impact

#	Date & Time	Day of Week	Route	Location	Description	Duration HH/MM
1	11/2/2017 6:33	Thursday	I-44 WB	BEFORE US 50 WEST/UNION	TT Crash Down Embankment	16:53
2	11/29/2017 9:58	Wednesday	I-44 EB	BEFORE I-270	Fatal Overhead Power Lines	4:10
3	12/27/2017 2:54	Wednesday	I-44 WB	BEFORE 7TH BLVD	Stalled TT Driveshaft Issue	4:04
4	12/28/2017 1:38	Thursday	RIVERVIEW DR	SPRING GARDEN DR	Two-Vehicle Crash / Car vs TT	3:43
5	11/12/2017 2:16	Sunday	I-270 NB	TO I-44 WB	Overtaken TT Diesel Spill /State Damage	3:27
6	12/24/2017 21:40	Sunday	I-44 EB	BEFORE MADISON	Multi-Vehicle Crash Reconstruction	3:21
7	11/26/2017 14:00	Sunday	50 US	INDEPENDENCE DR CST	Two-Vehicle Crash / Serious Injuries	3:05
8	11/8/2017 15:26	Wednesday	I-255 EB	BEFORE TELEGRAPH RD	13 Car Crash	3:04
9	12/6/2017 15:27	Wednesday	I-64 WB	TO LONG RD	Fatal Plane Crash	3:02
10	11/10/2017 16:53	Friday	I-44 WB	ON RAMP FROM I-64 WB	Overtaken TT Crash / Hauling Paper	2:58
11	12/29/2017 9:12	Friday	44 OR	I-44 EB RP	Overtaken TT Crash	2:52
12	12/18/2017 18:20	Monday	I-44 EB	BEFORE US 50	Two-Vehicle Crash / Airlifted Injured	2:51
13	12/3/2017 22:14	Sunday	I-70 EB	BEFORE ROUTE K	Two-Vehicle Crash /Overtaken Car	2:46
14	11/1/2017 21:43	Wednesday	NATURAL BRIDGE AVE	FAIR AVE CST	Fatal Two-Vehicle Crash / Reconstruction	2:45
15	12/23/2017 1:54	Saturday	I-70 WB	AT CAVE SPRINGS/ TRUMAN RD	Roadway Flooded	2:24
16	12/22/2017 10:30	Friday	I-70 WB	ON RAMP FROM W FLORISSANT AVE	TT Hung On wall trying to Turn	2:08
17	12/23/2017 9:28	Saturday	I-270 NB	TO PAGE AVE WB	Three-Vehicle Crash / Icy conditions	2:04
18	12/23/2017 12:17	Saturday	I-64 WB	TO I-270 SB	Two-Vehicle Crash / Icy conditions	2:02
19	12/26/2017 18:37	Tuesday	I-44 EB	ON RAMP FROM SP 100	TT Jackknifed / Off-loaded before Tow	2:02
20	12/06/2017 13:37	Wednesday	I-270 SB	Before Dorsett Road	Emergency Joint Repair Lanes 2&3	1:52



November/December 2017 Incidents with Mobility Impact Map





INCIDENT MANAGEMENT


ST. LOUIS DISTRICT ■ BI-MONTHLY REGIONAL MOBILITY REPORT ■ NOVEMBER/DECEMBER 2017



Major Impact Traffic Incidents and Mitigation

11/02/2017 (Thursday)

- **Time:** 2:00 am – 6:53 pm
- **Location:** St. Louis County – Westbound I-44 before US 50
- **Event Type:** Two-Vehicle Crash
- **Estimated Initial Impact:** Rush Hour: 1 of 2 travel lanes affected equals (=) 50%
- **Incident Details** The driver of a tractor trailer steered to the right attempting to avoid a deer, and travelled off the right side of the roadway. The vehicle ran through the guardrail, down an embankment, and struck a tree. The driver was transported with moderate injuries.
- **Action Taken:** The Franklin County Sheriff's Department, MSHP, Boles Fire Protection District and Meramec Ambulance District all responded to work the incident. The TMC dispatched an Emergency Response unit to assist with traffic control, and activated available DMS boards to alert drivers of the lane closure. The I-44 Tow Company responded and advised that due to the steep grade of the embankment, and damage to the trailer, which was essentially cut in half, they would need to take the right lane for an extended period of time. Furthermore, they advised it would be a minimum of four hours before their traffic control company could respond from the Springfield area. Given this information, the TMC contacted Maintenance Superintendent Dan Tucker to have a MoDOT traffic control team respond to expedite the removal. While waiting for the traffic control team to arrive, the right lane was reopened and the tow company worked on the shoulder removing what was left of the guardrail. Upon traffic controls arrival, the incident was turned over to maintenance and a lane drop was installed. The duration of the incident was further extended once the tractor trailer was pulled up the embankment as it loaded with over 10,000 boxes which had to be offloaded to another trailer. Community Relations was notified due to the lane closure being in place during both morning and evening rush hours, and the Admin Page was sent. During the morning rush hour, traffic queued between 2.5 and 2.8 miles. The evening rush hour saw the traffic queue approximately 8 miles, back to Pacific. DMS boards were extended back to RT 141 advising motorists to expect a major delay.
- **Event Duration:** 16 hours 53 minutes


 Westbound I-44 before US 50	Left Shoulder	Lane 1	Lane 2	Right Shoulder
Closed Hours/Minutes	0:00	0:08	14:53	16:53



Major Impact Traffic Incidents and Mitigation

11/08/2017 (Wednesday)

- **Time:** 3:24 pm – 6:28 pm
- **Location:** St. Louis County – Eastbound I-255 before Telegraph Road
- **Event:** Multi-Vehicle Crash
- **Estimated Initial Impact:** Rush Hour: 4 of 5 travel lanes affected equals (=) 80%
- **Incident Details:** Multi-vehicle, chain reaction crash with 13 cars involved.
- **Action:** St. Louis County Police responded along with Mehlville Fire and EMS. The TMC dispatched Emergency Response to assist with traffic control, and activated appropriate DMS boards. All lanes were briefly closed to move the vehicles out of the left lane to the three right lanes. Extended duration was due to an extensive investigation by St. Louis County PD who were attempting to determine the cause of the accident. EOC, community relations, and ER shift supervisor were all notified, and the SLAdmin text was sent. The queue reached 5 miles at its peak, and DMS boards were pushed back to notify drivers of the delay. Once the investigation was complete incident duration was further extended another 55 minutes for the last three vehicles to be towed.
- **Event Duration:** 3 hours 4 minutes

 Eastbound I-255 before Telegraph Road	Left Shoulder	Lane 1	Lane 2	Lane 3	Lane 4	Exit Lane	Right Shoulder
Closed Hours/Minutes	0:06	0:06	1:47	2:34	2:42	2:42	3:04



